

REMARKS

Claims 1-20 remain in the application for examination. Claims 1, 10 and 11 have been amended. Favorable consideration of the application is respectfully requested.

Applicants gratefully acknowledge the Examiner's participation in the telephone interviews regarding this application. Applicant's last response was not entered. The Advisory Action of October 30, 2007 indicated the earlier proposed claim amendments would require "further consideration absent any clear language defining the orientation, location and position of a central axis or point which the cutting inserts are angularly spaced." After further discussion between the undersigned and the Examiner, the Examiner has indicated the current amendment adequately describes the angular spacing and should not require further consideration.

Applicant resubmits the earlier amendments to the specification and drawings and remarks which were indicated as not entered.

FIG. 2 has been amended and FIG. 2A has been added to address the interview discussion related to clarifying what is meant by "angular spacing".

Claim 1 has been amended to recite a "helical end mill comprising a body having a circumferential face disposed about a rotational axis bearing a plurality of pockets for receiving cutting inserts, wherein the cutting inserts are arranged in at least ~~two rows~~ a first row and a second row and at least three columns on the circumferential face, wherein the angular spacing of the cutting inserts about the rotational axis within ~~at least one of the rows~~ the first row varies within the row, wherein the angular spacing of the cutting inserts within the second row varies within the row, wherein angular spacing is measured in a plane perpendicular to the rotational axis."

Claim 11 has been amended to recite a "helical end mill comprising a body having a circumferential face disposed about a rotational axis bearing a plurality of pockets for receiving cutting inserts, wherein the cutting inserts are arranged in at least a first row and a second row and at least three columns on the circumferential face, wherein the angular spacing of the cutting inserts about the rotational axis within the first row varies within the first row, and the angular spacing of the cutting inserts about the rotational axis within the second row varies within the second row and varies from the angular spacing of the cutting inserts about the

rotational axis within the first row, wherein angular spacing is measured in a plane perpendicular to the rotational axis.”

Basis for these amendments can be found in the specification at paragraph [0024] and Fig. 2.

Rejection Under 35 USC § 102(b)

The Examiner rejects Claims 1-20 under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,947,649 to Arai et al. (Arai ‘649). As amended, independent Claim 1 recites “[a] helical end mill ...wherein the angular spacing of the cutting inserts about the rotational axis within the first row varies within the row, wherein the angular spacing of the cutting inserts within the second row varies within the row.”

Arai ‘649 does not teach or suggest varied angular spacing of the cutting inserts within a first row and varied angular spacing of the cutting inserts within a second row. Paragraph [0022] of the specification recites “rows referred to as pockets 16 which are generally at the same vertical level when tool 10 is vertically oriented as seen in Fig. 1.” Moreover, at paragraph [0023], angular spacing is described in the following manner; “...at least one pocket 16 of a selected row of a flute 24 is angularly irregularly or unequally spaced from or with respect to proximity of a second pocket 15 of the same selected row but of flute 24 (or more generically stated, of a second column), and to a third pocket 16 of the same selected row butt of flute 26 (again, more generically stated, a third column).” As discussed during the interview, angular spacing of inserts within various rows would be measured in an end view or cross-section of the cutter oriented as seen in Fig. 2 and Fig. 6, i.e. in a plane generally perpendicular to longitudinal axis 120 shown in Fig. 5. Arai ‘649 does not teach or suggest angular spacing of the cutting inserts within one of the rows and angular spacing of the cutting inserts within a second row. Accordingly, independent Claim 1 and Claims 2-10 dependent therefrom are not anticipated by Arai ‘649.

Independent Claim 11 recites “the angular spacing of the cutting inserts about the rotational axis within the first row varies within the first row, and the angular spacing of the cutting inserts about the rotational axis within the second row varies within the second row and varies from the angular spacing of the cutting inserts about the rotational axis within the first row”. Arai ‘649 does not teach or suggest a helical end mill in which the angular spacing of the

cutting inserts about the rotational axis within the first row varies within the first row, and the angular spacing of the cutting inserts about the rotational axis within the second row varies within the second row and varies from the angular spacing of the cutting inserts about the rotational axis within the first row. Accordingly, it is submitted independent Claim 11 and Claims 12-20 depending therefrom are not anticipated by Arai '649.

For at least the foregoing reasons, Claims 1-20 are patentable over the prior art of record. Accordingly, an early notice of allowance of this application is respectfully requested.

In the event that any outstanding matters remain in connection with the present application, the Examiner is invited to telephone the undersigned to expedite the handling of such matters.

Respectfully submitted,



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